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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Anton Dukart

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EXAMINER

DAVID, MICHAEL D

ART UNIT

PAPER NUMBER

4155

MAIL DATE

DELIVERY MODE

03/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/556,838	Applicant(s) DUKART, ANTON	
	Examiner MICHAEL D. DAVID	Art Unit 4155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/14/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 11/14/2005 has been considered by the examiner.

Claim Objections

Claim 16 is objected to because of the following informalities: In claim 16 line 3 it appears that "calbe" should be replaced by "cable". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-19 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Boran (EP0995639A2).

Regarding claim 15, Boran discloses a device for impact detection (36, 42, 43, 40, 54; fig. 1,4; col. 4 lines 21-31) comprising: at least one piezo cable (44; fig. 3,5; col. 3 lines 33-44).

Regarding claim 16, Boran discloses the device according to claim 15, wherein the piezo cable is configured such that the device detects a capacitance change by an

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impact object with the aid of the piezo cable (A capacitance change is detected by the control unit (40) with cable (46) as a result of damage to the dielectricity (48) caused by an accident or by a change in the signal (82). As a result of a deformation of the shield (50), the capacitance of the capacitor (46, 48, 50) changes; col. 6 lines 5-23; fig. 3, 7).

Regarding claim 17, Boran discloses the device according to claim 16, wherein the piezo cable includes a first shield (50) as an electrode for detecting the capacitance change (see claim 16 above).

Regarding claim 18, Boran discloses the device according to claim 17, wherein the first shield has one of a cylindrical (fig. 3, 7) and semicylindrical design (fig. 3, 7).

Regarding claim 19, Boran discloses the device according to claim 15, wherein the piezo cable is configured such that an impact causes a piezoelectric pulse (fig. 5, 6; col. 4 line 58 – col. 5 line 32).

Regarding claim 23, Boran discloses the device according to claim 15, wherein the piezo cable is configured such that it undergoes a longitudinal change in an impact, which causes a resistance change (length and resistance change by, for instance plastic elongation of the wire (46, 48, 50); fig. 3,5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 20-22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boran (EP0995639A2) in view of Brown (US 6534999 B2).

Regarding claim 20, Boran discloses the device according to claim 19, as discussed and set forth above, except Boran does not explicitly disclose wherein the device achieves a spatial resolution of an impact by means of a delay-time measurement. Brown teaches, within the same field of endeavor (piezoelectric sensors), a cable sensor wherein the device achieves a spatial resolution of an impact by means of a delay-time measurement (fig. 1,5; col. 5 line 45 – col. 6 line 13; col. 7 lines 1-25) in order to "determine the relative location of an event". Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Boran, with a device similar to that Brown's in order to provide a means for determining the relative location of an event.

Regarding claim 21, Brown further teaches the device according to claim 20, wherein the piezoelectric pulse is evaluated directly, on the one hand, and is conveyed to an evaluation circuit via a delay line, on the other hand, so as to ascertain a delay

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time difference therefrom (fig. 1, 5; x, 100, 102; col. 6 lines 23-54, at x=0; col. 7 lines 1-25).

Regarding claim 22, Brown further teaches the device according to claim 21, wherein the piezo cable includes a second shield provided as a delay line, which is configured as a wound wire (50; fig. 1, 5; col. 3 lines 11-28).

Regarding claim 25, Brown further teaches the device according to claim 22, wherein the second shield is configured to be inductive, to characterize an impact object with respect to its conductivity (col. 1 lines 33-35)

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boran (EP0995639A2) in view of Bergner (GB 231707A).

Regarding claim 24, Boran discloses the device according to claim 23 as set forth above, except Boran does not explicitly disclose wherein a signal characterizing the resistance change is converted to a higher frequency for evaluation. Bergner teaches, within the same field of endeavor (piezoelectric cables/sensors), a device wherein a signal characterizing the resistance change is converted to a higher frequency for evaluation (35, 11; fig. 7, 8; R_k , I_k , V_{ref} , page 6 line 29 – page 8 line 2) in order to provide a means for not interfering with other measurements of lower frequencies. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Boran, with a device that convert a signal to a higher frequency similar to that of Bergner's in order to provide a means for not interfering with other measurements of lower frequencies.

Regarding claims 26-28, these claims recite product-by-process limitations. Regarding “wherein the piezo cable is situated in a trim of a bumper”, or “the piezo cable is injected into the trim”, or “the piezo cable is clamped into the trim”, the applicant is advised that, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, (Fed. Cir. 1985). In this case, the cited limitations failed to distinguish the claimed structure from the patented piezoelectric cable/sensors of Boran. See MPEP § 2113

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art of record discloses various piezoelectric cables/sensors and devices for impact detection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. David whose telephone number is 571-270-3737. The examiner can normally be reached on Monday-Friday, 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Victor Batson can be reached on 571-272-6987. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor Batson/

/MDD/
12/14/2008

Victor Batson
Supervisory Patent Examiner
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